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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,983	02/11/2004	Thammo Kellermann	71287	4552
23872	7590	12/15/2005	EXAMINER	
MCGLEW & TUTTLE, PC P.O. BOX 9227 SCARBOROUGH STATION SCARBOROUGH, NY 10510-9227			VASUDEVA, AJAY	
			ART UNIT	PAPER NUMBER
			3617	

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/776,983	Applicant(s) KELLERMANN ET AL.	
	Examiner Ajay Vasudeva	Art Unit 3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5, 7, 9 and 11-13 is/are allowed.
- 6) ☒ Claim(s) 6, 8, 10, 14, 15 and 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s). (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***New Rejection***

1. A reconsideration of the previously allowed claim(s) has resulted in a new rejection, based on new grounds. This Office Action is a non-final rejection. Any inconvenience caused to the applicants and their representative is regretted.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following must be shown or the feature(s) canceled from the claim(s).

- A control for activating the shut-off valve, as set forth in claim 14.
- A pressure sensor arranged within the outer pressure container, as set forth in claim 15.
- A pump for pumping fluid out of the outer pressure container, as set forth in claim 19.

No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. On page 8 (line 17), after "insulation 5 is attached on the", change "**outer**" to -- **inner** -- because such has been shown in the drawings and implied in the specification (*lines 17-19*).

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

- *An outer vessel hull with a driven propeller, and a pressure hull disposed in the outer vessel hull and defining a crew space for a human submarine crew, as set forth in the amended claim 1.*

Claim Objections

5. The following corrections are requested to improve the clarity and the form of the claim.

- In claims 1, 6, 8, 10, 11, and 13, after "said outer pressure container lead fluid", change "**fluid**" to one of the -- **the fluid oxygen** -- and -- **gaseous and/or liquid oxygen** --.
- In claim 2 (line 1), after "comprising conduits leading", change "**fluid gas**" to one of the -- **the fluid oxygen** -- and -- **gaseous and/or liquid oxygen** --.
- In claim 7 (line 3), after "said liquid gas pressure container lead", change "**gas**" to -- **gaseous** --.

Appropriate correction is requested.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 6, 8, 14, 15, and 17-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

(A) In claim 6, applicant claims a "pressure-increasing means to ensure a leading-away of fluid out of said outer pressure container even in a submerged condition of the pressure hull".

In claim 8, applicant claims a "pressure increasing means that make use of the pressure prevailing in the outer pressure container and/or in the liquid gas pressure container".

In claim 19, applicant claims a "pressure threshold means includes a pump to pump fluid out of said outer pressure container even in a submerged condition of the pressure hull".

The Specification states:

a pressure-increasing device is provided which ensures that the fluid may reliably conveyed to the outside...Such a pressure increasing means may for example consist of a piston cylinder arrangement with which this is achieved by way of a suitable surface ratio or also by way of suitable, safe pumps.

However, the specification does not disclose as to how or where such "pressure increasing means" or the "pump" is arranged with respect to the other components of the system.

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(B) In claim 14, applicant claims a "control which activates the shut-off valve to close on exceeding a predefined gas concentration in the pressure hull".

The specification merely teaches use of oxygen sensors for sensing increased gas concentration. However, the specification does not describe the arrangement or a workings of the "control" to activate the shut-off valve.

(C) In claim 15, applicant claims "at least one pressure sensor ...arranged within the outer pressure container, ... blocks off the supply of liquid gas out of the liquid gas pressure container".

The specification merely teaches use of oxygen sensors for sensing increased gas concentration, but not for sensing increased pressure. The specification does not describe a use of the "pressure sensor".

(D) In claim 18, applicant claims "safety means comprising a pressure relief valve including a rupture disk".

The specification states the following:

Such a safety means may be formed for example as a pressure relief valve or a rupture disk which on exceeding a predefined pressure frees the cross section of the conduit due to permanent destruction.

The liquid gas pressure container 3 as well as the outer pressure container 6 are provided with a common blow-off means 15 comprising a conduit 16 which leads out of the pressure hull 2 and which is closed off by way of a safety valve 17 or a rupture disk and opens into the surroundings.

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The specification teaches use of a pressure relief valve, or in alternative, of a rupture disk. The specification does not describe a use of the pressure relief valve in combination with the rupture disk.

Therefore, in view of the specification being silent on the claimed features, as described above, one skilled in the art would not have been able to make and/or use the invention.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 6, 8, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Carter, Jr. (US 3,473,337 A).

Carter Jr. shows (figure 1) a submarine [10] having a pressure hull [19b], an outer pressure container [12], and a liquid gas pressure container [11] storing liquid oxygen [20] (see col. 2, line 15). The term "submarine" has been broadly interpreted to mean any such vessel that is capable of operating submerged.

The outer pressure container is at least partially disposed in the pressure hull. Similarly, the liquid gas pressure container is at least partially disposed in the pressure hull, and is

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therefore considered to be "arranged within the pressure hull of the submarine", as required by the claim. The liquid gas pressure container is also surrounded by the outer pressure container. Means [44] are provided to lead fluid out of the pressure hull upon exceeding a predetermined pressure within the liquid gas pressure container. The safety means is a pressure relief valve [44]. The pressure relief valve first detects, or senses, the excess pressure prior to allowing a discharge of the gas.

Re claims 6 and 8, a pressure-increasing means [35] is provided for pressure buildup within the liquid gas pressure container, thereby ensuring a leading-away of fluid out of the liquid gas pressure container, and eventually out of the outer pressure container even in a submerged condition of the pressure hull.

Re claim 10, the outer pressure container is clearly able to withstand the pressure at the operational submerged depth without collapsing, and therefore, is considered to be dimensioned such that its allowable operating pressure corresponds at least to the pressure at the submerged depth of the submarine. Alternatively, if operating in very shallow depths, the allowable operating pressure of the outer pressure container would at least be equal to the pressure at the submerged depth of the submarine.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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11. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carter, Jr. (US 3,473,337 A) in view of Hibbard et al. (US 2,922,544 A).

Carter Jr. shows a submarine [10] with a safety means having a pressure relief valve [44], as above.

However, Carter does not show a provision of a rupture disk with the pressure relief valve.

Hibbard et al. teaches a use of a rupture disk with the pressure relief valve of the pressure vessels.

It would have been obvious for one skilled in the art at the time of the invention to provide a rupture disk with the pressure relief valve of Carter Jr., as taught by Hibbard et al. Providing such a disk would have prevented the corrosive fluid in the pressure container from contacting the pressure relief valve prior to the occurrence of the excessive pressure, thereby extending the operational life of the valve.

Allowable Subject Matter

12. Claims 1-5, 7, 9, and 11-13 are allowed.

Response to Arguments

13. Applicant's arguments with respect to claims 1-5, 7 and 9 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion


14. This Office action is Non-Final.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ajay Vasudeva whose telephone number is (571) 272-6689. The examiner can normally be reached on Monday-Friday 12:00 -- 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, S. Joe Morano can be reached on (571) 272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ajay Vasudeva
Examiner
Art Unit 3617


AJAY VASUDEVA 12/04/05
PATENT EXAMINER